Abstract

The scheduling of data transmissions for a CDMA system downlink or other type of communication network is implemented on a dynamic basis using a revenue-based policy. For a given transmission slot or other transmission interval, a maximum-rate user is identified from among a set of users requesting data transmissions, and a data transmission of the maximum-rate user is scheduled for the given interval. The maximum-rate user is identified based on application of coefficients of a revenue vector to corresponding feasible rates of the requesting users. The revenue vector is determined in an iterative manner using an adaptive algorithm which updates the revenue vector periodically to compensate for observed deviations between actual and target throughput, such that the deviations are reduced over time and the revenue vector converges to an optimal revenue vector. Advantageously, the invention allows the revenue vector to be determined without direct estimation of the frequency of occurrence of particular user rates.